AMSER Case of the Month: November 2022

60-year-old male with sudden onset head and neck pain

Ashley Woodford MS4, Cooper Medical School of Rowan University
Farooq Hassan DO, PGY-2, Cooper University Hospital
Rahul Garg, MD, Neuroradiology, Cooper University Hospital
Patient Presentation

- **HPI**: 60-year-old male presented to the ED with sudden onset of 10/10 headache and neck pain

- **Past Medical History**: Right ICA dissection

- **Past Surgical History**: None

- **Family History**: Non-contributory

- **Social History**: No smoking or illicit substance use. Drinks socially.
Pertinent Physical Exam and Labs

• **Physical Exam:**
  • AAO x3, muscle strength 5/5 throughout, sensation intact, CN II-XII intact, no facial droop or slurred speech. No pronator drift, dysmetria, or dysdiadochokinesia. Steady gait. No visual field deficits.

• **Labs:**
  • BMP, CBC with diff, PT-INR within normal limits
What Imaging Should We Order?
Select the applicable ACR Appropriateness Criteria

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<tr>
<th>Procedure</th>
<th>Appropriateness Category</th>
<th>Relative Radiation Level</th>
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<tbody>
<tr>
<td>CT head without IV contrast</td>
<td>Usually Appropriate</td>
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<tr>
<td>CTA head with IV contrast</td>
<td>May Be Appropriate (Disagreement)</td>
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<td>MRA head without and with IV contrast</td>
<td>Usually Not Appropriate</td>
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<td>MRA head without IV contrast</td>
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<td>Arteriography cervicocerebral</td>
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These imaging modalities were ordered by the ER physician.
Findings (unlabeled)
Findings: (labeled)

CTA Neck: Axial, Sagittal, and Coronal (L to R)
- Filling defect in the cervical portion of the right ICA due to extrinsic compression from an elongated right styloid process, consistent with a dissection.
- 4.3 cm right styloid process.
Final Dx:

Eagle Syndrome
Eagle Syndrome (Stylohyoid Syndrome)

• Rare condition caused by an elongated or abnormal styloid process giving rise to orofacial or cervical pain triggered by neck movement

• Anatomy:
  • An elongated/ossified stylohyoid complex may lead to compression of the structures surrounding it including: the facial nerve, auriculo-temporal nerve, lingual nerve, chorda tympani, glossopharyngeal nerve, and hypoglossal nerve
  • Compression of the internal or external carotid artery may lead to transient ischemic attacks, vertigo or syncope
Eagle Syndrome

• Epidemiology:
  • An elongated process is present in approximately 4% of the population
    • majority of these are asymptomatic
  • Female-to-male predominance of 3:1
  • Usually occurs in adults ages 30 to 50 years
  • Often occurs bilaterally; however, symptoms are typically unilateral

• Etiology:
  • Proposed mechanisms include surgical trauma (tonsillectomy), local chronic irritation leading to ossification, or an association with the presence of an arcuate foramen
Eagle Syndrome

- **Imaging:**
  - CT with 3D reconstruction allows for measurement of the length of the styloid process (>3 cm is considered elongated)
  - CT with angiography to visualize carotid flow if stroke or dissection is suspected

- **Treatment:**
  - Conservative management of symptoms (NSAIDs, antidepressants, transpharyngeal injection of analgesics and steroids)
  - Surgical shortening of the styloid process via an intraoral or external approach
References: